

CHAMBERS'S JOURNAL

OF

POPULAR

LITERATURE, SCIENCE, AND ART.

Fourth Series

CONDUCTED BY WILLIAM AND ROBERT CHAMBERS.

No. 618.

SATURDAY, OCTOBER 30, 1875.

PRICE 1½d.

PILCHARD-DRIVING.

THE summer and autumn months are a busy time among Cornish fishermen, who have the three separate harvests of mackerel, herring, and pilchards to garner in quick succession. Of these fish, the pilchard is the least well known, as it is the least general in its distribution, being confined almost solely to the waters of Cornwall. The pilchard is, indeed, to be found in abundance off the coasts of Ireland, but there the fishery is almost entirely neglected. In Cornwall, on the other hand, the pilchard season is depended on by the fishermen for a large portion of their yearly earnings; and hundreds of boats and hundreds of miles of nets are nightly employed, during the latter part of the year, in pursuit of these fish.

A very pretty sight it is to watch the fishing fleet disperse itself over the broad expanse of St Ives' Bay or Mount's Bay at the close of the day. The setting sun lights up the bold rocky coast with a glory which only its rays can impart; and the vessels, with their two brown sails set, stand out in sharp relief against the shining surface of the water, in which the rosy glow of the sky is reflected and repeated with fresh intensity.

But a prettier sight still is that obtained from on board one of these boats. Slowly, as the evening breeze carries us away from port, and the hills recede in the distance, the sun dips towards the horizon, leaving a long bright streak across the surface of the sea. We watch his waning glory with mingled feelings of pleasure and regret—of regret, that so bright a scene so soon should pass away, that such gorgeous effects of colour should be so transient; but of pleasure in the knowledge that the gray clouds which succeed the rosy, purple mass are better suited for the work we have in hand; for it is not until the after-glow of the beautiful sunset has toned down into sober tints, that we can set our nets to any advantage.

There are few pleasanter ways of spending a summer's night than in 'driving' for pilchards, as it is called. There are two methods of catching

this fish, for which different kinds of nets are employed—namely, 'seine-nets' and 'drift-nets.' The former can be used only in shallow water, when they are 'shot' in a circle round the shoal of fish, which are thereby inclosed, and can be kept alive till the seine is emptied of its contents by means of smaller nets. These nets are used both by day and night, whenever a shoal of fish is seen sufficiently near the shore; but drift-nets can only be employed at night. They have a mesh of about half an inch from knot to knot, or 'six score to the yard,' and often measure as much as 'eighteen score deep,' or three yards wide. It is no uncommon thing for a pilchard-boat to shoot more than a mile of this netting at once. Fancy, over seventy-six million meshes, each capable of holding one pilchard, forming one continuous trap for the unwary fish!

A peculiarity of the pilchard is, that it swims close to the surface; and, as a shoal is 'heading' towards the shore, it can be plainly seen a long distance off, causing the surface of the water to darken with the compact mass. Gradually approaching the shoal, one can distinguish the glittering sides of the fish, as they jump and flutter about on the top of the water, causing quite a commotion, and a perceptible sound with their quick movements. Stamp with the foot at the bottom of the boat, and they disappear in a moment, striking downward, to rise again a few minutes after.

After sunset, when the boat finds itself in the midst of shoals of fish like this, it is time to shoot the nets. Two men, one at the head-rope, the other at the foot, pay them out, hand over hand. Every few seconds a splash in the water betokens the casting overboard of one of the larger buoys, which, alternating with the smaller floats, are attached to the nets. By the time the paying-out is accomplished, darkness has come on, and we wait awhile for the fish to strike the wall of netting placed in their path. A dark, moonless night is best suited for fishing; but if the water is in that curious phosphorescent state known among fishermen as 'burning,' which is often the case on

the darkest nights, the scene is one of extraordinary beauty. Every break in the surface of the water, whether caused by a wave, by the motion of the boat, or by the splashing of the net-floats, is illumined by a lovely glow of phosphorescent light, which gives the sea the appearance of being a mass of liquid fire. The net, hanging deep below the surface in a perfectly upright position, can be distinctly seen, and the boat itself seems set in molten silver.

At our mast-head a light is hung, to warn approaching vessels that we are made fast to our net. All around may be seen, dancing on the waters, the lights of one or two hundred more boats, with here and there the red or green lamp of some big ship bound on her way to some distant port, or returning home with the riches of foreign lands. Farther off still are the lamps burning on shore, awakening thoughts of the old times, when the false beacon of the Cornish wrecker was raised on high, to lure vessels to destruction. Happily, better days have dawned, and none are more eager to man the rescuing life-boat in aid of the shipwrecked sailor than the Cornish fishermen. The wrecker's beacon has given place to the danger signal of the lighthouse, keeping watch and guard day and night over the hidden dangers of the deep. Yonder, to the right, is the warning light of the Wolf Rock Light, alternately flashing red and yellow; while on the opposite side is the bright fixed double light of the celebrated Lizard Lighthouse, generally the last point of English land seen by the outward-bound crew, and the first spot recognised on their return.

Amid such a scene do we wait for the 'school' to strike the net. Overhead, the gulls are screaming and flapping their long wings, darting down every now and then into the water, as the unwary fish appear within their reach. The light attracts them to the boat, and they flit suddenly by, with a shrill cry, and off into the darkness like some ghost or spirit called by a second Ariel from the 'vasty deep.' And yet their presence is a good omen, denoting the existence of plenty of fish in the immediate neighbourhood; and, encouraged by this, the master soon gives the signal to haul in the net. It may not be amiss to remark that the sea-gull is the fisherman's friend everywhere; the presence of these birds in flocks over any particular spot on the sea denoting, with all but unvarying accuracy, the presence of fish. In many places indeed, the fisherman's movements mainly depend upon those of the gulls, which, hovering above or diving swiftly down, point to the welcome shoal.

Now our boat is a scene of busy activity. Slowly at first, but more quickly presently, the fish fall out of the net as it is hauled in, hand over hand, by the strong arms of the excited but steady fishermen. They fall on the deck with a flap and a rattle, which denotes that though they have been hung by the gills in the fine meshes of the net, they are still alive and ready to struggle for liberty. Soon, however, they lie motionless and dead. Hardly any fish dies more quickly than the pilchard, when taken out of the water.

As the catch comes pouring into the boat, the fish, reflecting the light from our lamp, present an appearance which no one can conceive by merely observing a fish in the fishmonger's shop, and which no painter, not even Mr Rolfe, the 'Land-

seer of Fishes,' could hope to imitate. Their scales are of lovely opalescent tints, barred with stripes of green, blue, and violet, which shine with a brilliancy and yet a softness which no gems, no pearls, could produce. To compare them to the most exquisite work of the jeweller's art is to give but a faint idea of the splendour of the colouring.

In an hour's time our mile or more of netting, with its living, struggling load of fishes, is hauled in and emptied. On a suitable night such a net will capture from eight to twelve or fifteen thousand fish. On such a night as we have described, when the fish can easily see the net in the water, six thousand fish is considered a good catch. They are nearly all pilchards; here and there is a stray pollock or a scad, but so closely do the pilchards swim together in the sea, that other kinds of fish are very rarely met with in a shoal. The fishermen even affirm that they actually raise the temperature of the water in the particular locality in which they are congregated together.

Night after night hundreds of boats go out in search of the pilchards, and yet every year the fish are in as countless millions as ever. They are principally used for export to Italy, after being salted and packed in barrels; and for home consumption in Cornwall, cured in vinegar, &c. Hundreds of tons are used for manure. But a new trade has recently been established in Cornwall, which will utilise vast quantities of these fish—namely, the preparation of pilchards as sardines, in oil. The Cornish Sardine Company, of Falmouth, has just been formed for the purpose of making 'Cornish sardines;' and as it is generally admitted that the pilchard and the sardine are one and the same fish, the trade will probably be a very successful one. Anybody, however, can buy the Cornish sardines, which will, no doubt, be preferred by Englishmen to the foreign production; but, as it is not everybody who can see the fish actually caught, we have given the above sketch of a night's pilchard-driving.

THE FLAG OF DISTRESS.

CHAPTER XXXV.—A TATTOO THAT NEEDS RETOUCHING.

THE great Pacific current in many respects resembles the Gulf Stream of the Atlantic. Passing eastward under the Aleutian Archipelago, it impinges upon the American continent, by Vancouver's Island; thence setting southward, along the Californian coast, curves round horse-shoe shape, and strikes back for the centre of the South Sea, sweeping on past the Sandwich Isles. By this disposition, a ship bound from San Francisco for Honolulu has the flow in her favour; and if the wind be also favourable, she will make fast way. As chance has it, both are propitious to the *Crusader*; and the war-ship standing for the Sandwich Islands will likely reach them after an incredibly short voyage. There are two individuals on board of her who wish it to be so; counting every day, almost every hour, of her course. Not that they have any desire to visit the dominions of King Kamekameha, or expect pleasure there. On the contrary, if left to themselves, the *Crusader's* stay in the harbour of Honolulu would

not last longer than necessary to procure a boat-load of bananas, and replenish her hen-coops with fat Kanaka fowls.

It is scarce necessary to say that they who are thus indifferent to the delights of Owyhee are the late-made lieutenant, Crozier, and the midshipman, Cadwallader. The bronzed Hawaiian beauties will have small attraction for them. Not the slightest danger of either yielding to the blandishments oft lavishly bestowed upon sailors by these seductive damsels of the Southern Sea. For the hearts of both are yet thrilling with the remembrance of smiles vouchsafed them by other daughters of the sunny south, of a far different race—thrilling, too, with the anticipation of again basking in these smiles under the sky of Andalusia.

It needs hope—all they can command—to cheer them. Not because the time is long, and the place distant. Sailors are accustomed to long separation from those they love, and so habituated to patience. It is no particular uneasiness of this kind which shadows their brows, and makes every mile of the voyage seem a league. Nor are their spirits clouded by any reflections on that which vexed them just before leaving San Francisco. If they have any feelings about it, they are rather those of repentance for suspicions, which both believe to have been as unfounded as unworthy. What troubles them now—for they are troubled—has nought to do with that. Nor is it any doubt as to the loyalty of their *fiancées*, but fear for their safety. It is not well defined, but like some dream which haunts them; at times so slight as to cause little concern, at other times filling them with anxiety. But in whatever degree felt, it always assumes the same shape; two figures conspicuous in it, besides those of their betrothed sweethearts—two faces of evil omen, one that of Calderon, the other De Lara's. What the young officers saw of these men, and what more they learnt of them before leaving San Francisco, makes natural their misgivings, and justifies their fears. Something seems to whisper them that there is danger to be dreaded from the gamblers—desperadoes as they have shewn themselves—that through them some eventuality may arise, affecting the future of Carmen Montijo and Inez Alvarez, so as to prevent their escape from California. Escape! Yes; that is the word Messrs Crozier and Cadwallader make use of in their conversation on the subject—the form in which their fear presents itself.

Before reaching the Sandwich Islands, they receive a scrap of intelligence which in some respect cheers them. It has become known to the *Crusader's* crew that the frigate is to make but short stay there—will not even enter the harbour of Honolulu. The commission intrusted to her captain is of no very important nature. He is simply to leave an official despatch, with some commands for the British consul; after which head round again, and straight for Panama.

'Good news; isn't it, Ned?' says Cadwallader to his senior, as the two on watch together stand conversing. 'With the quick time we've made from Frisco, as the Yankees call it, and no delay to speak of in the Sandwiches, we ought to get to the Isthmus as soon as the Chilean ship.'

'True; but it will a good deal depend on the time the Chilean ship leaves San Francisco. No doubt she'd have great difficulty in getting a suffi-

cient number of hands. Blew told you there were but the captain and himself!'

'Only they; and the cook, an old darkey—a runaway slave, he said. Besides a brace of great red baboons—orange. That was the whole of her crew, by last report! Well; in one way we ought to be glad she's so short,' continues the midshipman. 'It may give us the chance of reaching Panama before her; and, as the frigate's destined to put into that port, we may meet the dear girls again sooner than we expected.'

'I hope and trust we shall. I'd give a thousand pounds to be sure of it. It would lift a load off my mind—the heaviest I ever had on it.'

'Off mine too. But even if we don't reach Panama before them, we'll hear whether they've passed through there. If they have, that'll set things right enough. We'll then know they're safe, and will be so—*Hasta Cadiz*.'

'It seems a good omen,' says Crozier, reflectingly, 'that we are not to be delayed at the islands.'

'It does,' rejoins Cadwallader; 'though, but for the other thing, I'd liked it better if we were to stay there—only for a day or two.'

'For what reason?'

'There!' says the midshipman, pulling up his shirt-sleeve, and laying bare his arm to the elbow. 'Look at that, lieutenant!'

The lieutenant looks, and sees upon the skin, white as alabaster, a bit of tattooing. It is the figure of a young girl, somewhat scantily robed, with long streaming tresses: hair, contour, countenance, everything done in the deepest indigo.

'Some old sweetheart?' suggests Crozier.

'It is.'

'But she can't be a Sandwich Island belle. You've never been there?'

'No, she isn't. She's a little Chileña, whose acquaintance I made last spring, while we lay at Valparaiso. Grummet, the cutter's coxswain, did the tattoo for me, as we came up the Pacific. He hadn't quite time to finish it, as you see. There was to be a picture of the Chilean flag over her head, and underneath, the girl's name, or initials. I'm now glad they didn't go in.'

'But what the deuce has all this to do with the Sandwich Islands?'

'Only, that I intended to have the thing taken out there. Grummet tells me he can't do it, but that the Kanakas can. He says they've got some trick for extracting the stain, without scarring the skin, or only very slightly.'

'But why should you care about removing it? I acknowledge tattooing is not nice on the epidermis of a gentleman; and I've met scores, like yourself, sorry for having submitted to it. After all, what does it signify? Nobody need ever see it, unless you wish them to.'

'There's where you mistake. Somebody *might* see it, without my wishing—sure to see it, if ever I get'—

'What?'

'Spliced.'

'Ah! Inez?'

'Yes; Inez. Now you understand why I'd like to spend a day or two among the South Sea Islanders. If I can't get the thing taken out, I'll be in a dilemma. I know Inez would be indulgent in a good many ways; but when she sees that blue image on my arm, she'll look black

enough. And what am I to say about it? I told her she was the first sweetheart I ever had; as you know, Ned, a little bit of a fib. Only a white one; for the Chileña was only a mere fancy, gone out of my mind long ago, as, no doubt, I am out of hers. The question is, how's her picture to be got out of my skin? I'd give something to know.'

'If that's all your trouble, you needn't be at any expense—except what you may tip old Grummet. You say he has not completed the portrait of your Chileña. That's plain enough, looking at the shortness of her skirts. Now let him go on, and lengthen them a little. Then finish by putting a Spanish flag over her head, instead of the Chilean, as you intended, and underneath, the initials "I. A." With that on your arm, you may safely shew it at Cadiz.'

'A splendid idea! The very thing! The only difficulty is, that this picture of the Chilean girl isn't anything like as good-looking as Inez. Besides, it would never pass for her portrait.'

'Let me see. I'm not so sure about that. I think with a few more touches it will stand well enough for your Andalusian. Grummet's given her all the wealth of hair you're so constantly bragging about. The only poverty's in that petticoat; but if you get the skirt stretched a bit, that will remedy it. You want sleeves, too, to make her a lady. Then set a tall tortoise-shell comb upon her crown, with a spread of lace over it, hanging down below the shoulders—the mantilla—and you'll make as good an Andalusian of her as is Inez herself.'

'By Jove! you're right; it can be done. The bit added to the likeness, let it be done so as to cover her face—at least the lower half of it; that will be just as they carry it. You can hide that nose, which is a trifle too snub for the Andalusian. The eyes appear good enough.'

'By all means, give her a fan. And as you're doubtful about the likeness, let it be done so as to cover her face—at least the lower half of it; that will be just as they carry it. You can hide that nose, which is a trifle too snub for the Andalusian. The eyes appear good enough.'

'The Chileña had splendid eyes!'

'Of course, or she wouldn't have her portrait there. But how did your artist know that? Has he ever seen the original?'

'No; I described her to him; and he's acquainted with the costume the Chilean girls wear. He's seen plenty of such. I told him to make the face a nice oval, with a small mouth, and pretty pouting lips; then to give her great big eyes. You see he's done all that.'

'He has, certainly.'

'About the feet? They'll do, won't they? They're small enough, I should say.'

'Quite small enough; and those ankles are perfection. They ought to satisfy your Andalusian—almost flatter her.'

'Flatter her! I should think not. They might your Biscayan, with her big feet; but not Inez; who's got the tiniest little understandings I ever saw on a woman—tall as she is.'

'Stuff!' scornfully retorts Crozier; 'that's a grand mistake people make about small feet. It's not the size, but the shape, that's to be admired. They should be in proportion to the rest of the body; otherwise, they're a monstrosity, as among the Chinese, for instance. And as for small feet

in men, about which the French pride and pinch themselves, why, every tailor's got that.'

'Ha, ha, ha!' laughs the young Welshman. 'A treatise on Orthopedia, or whatever it's called. Well, I shall let the Chileña's feet stand, with the ankles too, and get Grummet to add on the rest.'

'What if your Chileña should chance to set eyes on the improved portrait? Remember we're to call at Valparaiso!'

'I never thought of that.'

'If you should meet her, you'll do well to keep your shirt-sleeves down, or you may get the picture scratched—your cheeks along with it.'

'Bah! there's no danger of that. I don't expect ever to see that girl again—don't intend to. It wouldn't be fair, after giving that engagement ring to Inez. If we do put into Valparaiso, I'll stay aboard all the time the frigate's in port. That will insure against any'—

'Land, ho!'

Their dialogue is interrupted. The look-out, on the masthead, has sighted Mauna-Loa.

CHAPTER XXXVI.—A CREW THAT MEANS MUTINY.

A ship sailing down the Pacific, on the line of longitude 125° W. Technically speaking, not a ship, but a *barque*, as may be told by her mizzen-sails, set fore and aft.

Of all craft encountered on the ocean, there is none so symmetrically beautiful as the *barque*. Just as the name looks well on the page of poetry and romance, so is the reality itself on the surface of the sea. The sight is simply perfection. And about the vessel in question another graceful peculiarity is observable: her masts are of the special kind called *polacca*—in one piece from step to truck.

Such vessels are common enough in the Mediterranean, and not rare in Spanish-American ports. They may be seen at Monte Video, Buenos Ayres, and Valparaiso, to which last this *barque* belongs. For she is Chilean built; her tall tapering masts made of trees from the ancient forests of Araucania. Painted upon the stern is the name, *El Condor*; for she is the craft commanded by Captain Antonio Lantanas. This may seem strange. In the harbour of San Francisco the *Condor* was a ship. How can she now be a *barque*? The answer is easy, as has been the transformation; and a word will explain it. For the working of her sails, a *barque* requires fewer hands than a ship. Finding himself with an incomplete crew, Captain Lantanas resorted to a stratagem, common in such cases, and converted his vessel accordingly. The conversion was effected on the day before leaving San Francisco; so that the *Condor*, entering the Golden Gate a ship, stood out of it a *barque*. As this she is now on the ocean, sailing southward along the line of longitude 125° W.

On the usual track taken by sailing-vessels between Upper California and the Isthmus, she has westered, to get well clear of the coast, and catch the regular winds, that, centuries ago, wafted the spice-laden Spanish galleons from the Philippines to Acapulco. A steamer would hug the shore, keeping the brown barren mountains of Lower California in view. Instead, the *Condor* has sheered wide from the land; and, in

all probability, will not again sight it till she begins to bear up for the Bay of Panama.

It is the middle watch of the night—the first after leaving San Francisco. Eight bells have sounded, and the chief-mate is in charge, the second having turned in, along with the division of crew allotted to him. The sea is tranquil, the breeze light, blowing from the desired quarter, so that there is nothing to call for any unusual vigilance. True, the night is dark, but without portent of storm. It is, as Harry Blew knows, only a thick rain-cloud, such as often shadows this part of the Pacific. But the darkness need not be dreaded. They are in too low a latitude to encounter icebergs; and upon the wide waters of the South Sea there is not much danger of collision with ships. Notwithstanding these reasons for feeling secure, the chief officer of the *Condor* paces her decks with a brow clouded as the sky over his head, while the glance of his eye betrays anxiety of no ordinary kind. It cannot be from any apprehension about the weather. He does not regard the sky, nor the sea, nor the sails. On the contrary, he moves about, not with bold manlike step, as one having command of the vessel, but stealthily; now and then stopping and standing in crouched attitude, within the deeper shadow thrown upon her decks by masts, bulwarks, and boats. He seems less to occupy himself about the ropes, spars, and sails, than the behaviour of those who work them. Not while they are working them either, but more when they are straying idly along the gangways, or clustered in some corner, and conversing. In short, he appears to be playing spy on them. For this he has his reasons, and they are good ones. Before leaving San Francisco, he discovered the incapacity of the crew, so hastily got together. A bad lot, he could see at first sight—rough, ribald, and drunken. In all, there are eleven of them, the second-mate included; the last, as already stated, a Spaniard, by name Padilla. There are three others of this same race—Spaniards, or Spanish-Americans—Gil Gomez, Jose Hernandez, and Jacinto Velarde; two Englishmen, Jack Striker and Bill Davis; a Frenchman, by name La Crosse; a Dutchman; and a Dane; the remaining two being men whose nationality is difficult to determine, and scarce known to themselves—such as may be met on almost every ship that sails the sea.

The chief officer of the *Condor*, accustomed to a man-o'-war, with its rigid discipline, is already disgusted with what is going on aboard the merchantman. He has been so before leaving San Francisco, having also some anxiety about the navigation of the vessel. With a crew so incapable, he anticipated difficulty, if not danger. But now that he is out upon the open ocean, he is sure of the first, and fully apprehensive of the last. For, in less than a single day's sailing, he has discovered that the crew, besides counting short, is otherwise untrustworthy. Several of the men are not sailors at all, but 'long-shore' men; one or two of them 'land-lubbers,' who never laid hand upon a ship's rope before clutching those of the *Condor*. With such, what chance will there be for working the ship in a storm?

But there is a danger he dreads far more than the mismanagement of her ropes and sails—insubordination. Even thus early, it has shewn itself among the men, and may at any

moment break out into open mutiny. All the more likely from the character of Captain Lantanas, with which he has become well acquainted. The Chilean skipper is an easy-going man, given to reading books of natural history, and collecting curiosities, as evinced by his brace of Bornean apes, and other specimens picked up during his trading trip to the Indian Archipelago. A man in every way amiable, but just on this account the most unfitted to control a crew such as that he has shipped for the voyage to Valparaiso. Absorbed in his studies, he takes little notice of them, leaving them in the hands, and to the control of his *piloto*, Harry Blew. But Harry, though a typical British sailor, is not one of the happy-go-lucky kind. He has been intrusted with something more than the navigation of the Chilean ship—with the charge of two fair ladies in her cabin; and although these have not yet shewn themselves on deck, he knows they are safe, and well waited on by the black cook, who is also steward, and who, under his rough sable skin, has a kindly, gentle heart. It is when thinking of his cabin passengers that the *Condor's* first-officer feels apprehensive, and then not from the incapacity of her sailors, but their bold, indeed almost insolent behaviour. Their having shewn something of this at first might have been excusable, or, at all events, capable of explanation. They had not yet sobered down. Fresh from the streets of San Francisco, so lawless and licentious, it could not be expected. But most of them have been now some days aboard—no drink allowed them save the regular ration, with plenty of everything else. Kind treatment from captain and mate, and still they shew scowling and discontented, as if the slightest slur, an angry word, even a look, would make mutiny among them. What can it mean? What do the men want?

A score of times has Harry Blew thus interrogated himself, without receiving satisfactory answer. It is to obtain this he is now gliding silently about the *Condor's* decks, and here and there concealing himself in shadow, in the hope he may overhear some speech that will give him a clue to the conspiracy—if conspiracy it be. And in this hope he is not deceived or disappointed, but successful even beyond his most sanguine expectations; for he at length gets the clue not only to the insubordination of the crew, but all else that has been puzzling him. And a strange problem it is, its solution positively appalling. He gets it while standing under a piece of sail-cloth, spread from the rail to the top of the round-house—rigged up by the carpenter as a sun-screen, while doing some work during the heat of the day, and so left. The sky being now starless and pitch-black, with this additional obstruction to light, Harry Blew stands in obscurity impenetrable to the eye of man. One passing so close as almost to touch could not possibly see him.

Nor is he seen by two men, who, like himself, sauntering about, have come to a stop under the spread canvas. Unlike him, however, they are not silent, but engaged in conversation, in a low tone, still loud enough for him to hear them—every word said. And to every one he listens with interest so engrossing, that his breath is well nigh suspended.

He understands what is said; all the easier from their talk being carried on in English—his own tongue. For they who converse are Jack

Striker and Bill Davis. And long before their dialogue comes to an end, he has not only obtained intelligence of what has hitherto perplexed him, but gets a glimpse of something beyond—that which sets his hair on end, and causes the blood to curdle in his veins.

THE ROUGH.

THE rough comes into the world in a low-ceiled, stuffy bedroom, containing, besides the dirty bed, a broken chair or two, a scrap of looking-glass, a chest of drawers with one of its fore-feet missing, or a locker which serves as both seat and wardrobe. The washing apparatus is to be found at the sink down-stairs. He is wrapped up in a blanket, and dressed in the clothes which his mother somehow or another always appears able to provide, frequently from the Dorcas Society of the neighbourhood or parish. He is cradled either in a corner of his mother's bed, or in a deal box in which fish, fruit, or firewood has been hawked about. His father welcomes him with a jovial burst of the language of Billingsgate, but soon tires of him, and contents himself with recognising him as a fact, while he appears to ignore him as offspring or relative.

He receives the stamp of individuality by entry in the Registrar's book as a male child, born in such a place and at such a time, and destined to distinguish some name which his father usually selects, being careful that it is one which will bear shortening into a sharp though tender monosyllable. Possibly, by dint of perseverance on the part of clergyman or visitor, he is taken to church to be christened; although his father objects to being of the party, not only on the general ground of his disinclination to enter a place of worship, but also on the more particular one of dislike to be seen entering one 'with a lot of women and babbies.' We can recall a scene in which the father did accompany the mother, and gave the name—'Tom!' 'Thomas,' amended the clergyman. 'Tom! T, O, M!' was the abrupt reply. Whereupon the clergyman christened the child Thomas, and giving him back to the disconcerted parents, said gently: 'You can call him Tom, you know.'

Tom is next vaccinated, after some little difficulty with the authorities. Sometimes the result is unfortunate; large sores, generated by dirt and aggravated by neglect, making him a burden to himself and his friends. Soon he can crawl. He is then handed over to the preceding baby as to a guardian angel, or to Jemima Ann if there be an elder sister, and at once sets himself, as naturally as young crabs walk sideways, to practise self-will, to cultivate his appetite, and to spoil his complexion and often his features. He makes mud-pies, and builds houses with bits of broken china. He is now and then lost in the anxious pursuit of the paper-windmill seller, and taken to the station-house to be left till called for; where his mother finding him, divides her feelings into anger and joy, and their manifestation into slaps and cuddlings, shaking him till the growth of his teeth is stimulated by the repercussion, and then carrying him home in her arms with a carefulness that threatens suffocation. His tears and other facial

outcomes of grief are kissed away by the sympathetic tongue of the sturdy bull-terrier that inhabits the back-yard or the cupboard beneath the staircase.

Growing older, he receives more notice from his father, who holds him on his knee while at his meals, giving him bits and scraps, and occasionally permitting him to bury his nose in the mug of beer he fetches from the public-house. Then comes school. The present adult rough escaped that which has already become a standing nuisance to the rising generation—the action of the compulsory education principle, through the agency of the school-board officer. This new enemy is a source of greater terror to him than the policeman. The latter only says, 'Move on;' the former, 'Move in.' And in he has to move; and once in, he has to endure the two sufferings least congenial to his nature—restraint of body and application of mind. As regards out-door recreation, he can watch his seniors play at pitch and toss, or as an unobserved observer may learn the proper terms in use at rat-warries, pigeon-flying, or dog-fights. His home-training is, alike by example and treatment, brutalising and violent.

At length, with just enough literary residuum to enable him to write his name, and pick his way through a newspaper report, omitting the long words, Tom is promoted to work. Exceptions to the rule exist: some boys are naturally ready at learning, and leave school tolerably well-grounded in elementary subjects. These either raise themselves above their original condition and associates, or become their oracles. Now the animal nature predominates, with scarcely anything to check it. He is bullied by the man he works for, and is independent at home. As his wages increase he provides himself with luxuries and recreations. His first pigeon occupies all his affections and all his spare time. He carries it in the pocket of his coat out into the fields or some open space, where he throws it up, and then follows it home. Or he may turn his fancy to a puppy. In either case he will starve himself before his pets grow lean from want of food.

But it is after the period of boyhood, and before that of mature manhood, say from seventeen to five-and-twenty, that the title of which we are treating is most fitly applied to those who bear it. Then the animal spirits are highest, and there is no experience to check and direct them. This, then, is the period during which society suffers most annoyance from Tom. He and his fellows supply most of the weight, and nearly all the noise and mischief, in every general disturbance or riot. They are the patriots who fling red or blue powder at elections, who smash the windows of the unpopular candidate, who hustle individuals wearing the wrong colours; and are the politicians who support the Licensed Victualler, declaim against the Permissive Bill, and teach their dogs to snarl at the words 'Good Templar!' And so grows up the juvenile rough as a nuisance to society.

Of all the disagreeables the policeman has to know, the chief, after those arising from drunken and quarrelsome women, are inflicted upon him by the youthful rough. He has nothing technical to charge him with; the pavement is free to all; in this land all may laugh as they please, and may even bite their thumbs without breach of the law. No doubt it is very aggravating to a sedate

constable, whose movements are regulated by drill, and who is debarred from the natural relief of repartee and retort, to observe that his personal presence in a street is the cause of all kinds of mocking movements and sarcastic colloquialisms. The human nature in the constable is, of course, stirred up by all this; but it has to be endured. He knows well that by the second time his face is seen on that most objectionable beat he shall have a nickname, which also must be tolerated. The truth is, the wit of the rough is usually exhibited in nomenclature. A lad from the workhouse was named, in a certain society which we were privileged to enter, 'Union Jack;' a red-headed lad was 'Ginger;' one with large eyes was 'Lights.' It would not be advisable to pursue the subject further.

When we come to watch the moral side of the rough, we discover a very saddening state of things. Whatever may be the cause or causes, the fact is patent that there is in it no nobility of character, and very little admiration for it; no moral courage and very little physical; and that honesty, truth, mercy, generosity—the qualities which soften down brute strength as ivy or honey-suckle softens down stiff outlines in buildings—are utterly wanting. We read lately, to a class of lads varying in age from fifteen years to twenty-two, the tale of *Damon and Pythias*, and then invited opinions. The first one was this: 'Well, I wouldn't have come back, not for my own father; live as long as you can, and as jolly as you can, I say.'

The absence of all training towards self-restraint in any direction in infancy and childhood is followed naturally by self-indulgence in all directions in youth and manhood. The young rough knows no self-restraint now. Beer and tobacco he has at all cost to him and his. Subordination he scorns. Regular work he hates. Bodily indulgences he procures, by proper means if he can; if not, he falls back often enough upon his brute force. From want of self-restraint, quite as much as from the various other reasons assigned by other people for him, he deserts from the army. The universal complaint against the army discipline made by his class—that there are 'too many masters'—proves the correctness of this view. There is no chivalry, no love of distinction, or hope of achieving honour, to be met with among the roughs. They only enlist to get a meal in bad times, to escape from some scrape in their own neighbourhood, or to get rid of a scolding and slovenly wife, married in the haste of boyhood, but repented of in the leisure which comes all too soon.

It was owing to this cause working out in the direction of restlessness, that several boys on one of Her Majesty's training ships, lopped off a joint from a finger of their right hands, in the hope that being thus disabled they would be discharged. We knew one at least of the culprits, and were rejoiced to find that this mortification of the flesh was so far from succeeding, that the ascetics who practised it were sent for a long service on the East India and China stations.

This want of self-restraint is seen in every situation and under every variety of pressure. The violent assaults, accompanied by lava-streams of blasphemy and abuse, that are the issues of the anger of the rough, testify to it in the province of

the emotions. The reckless gratification of the passion for drink, the plunging into marriage in boyhood without provision of money or furniture, shew that there is an utter want of it in the domain of prudence. In danger, none are so prone to panic, attended by the abandonment or thrusting aside of the weak, women, and children, as a gang of roughs—as the list of survivors from the *Northfleet* shewed. And as there is no self-command in times of physical danger, so there is no self-respect in presence of a promise. On more occasions than we care to recall, we have received a promise, with shaking of hands upon it, from young men of this class, who have not only deliberately broken it, but have shewn no signs of awkwardness on meeting us afterwards.

Envy of the rich, arising from a complete ignorance of political economy, is another unhealthy characteristic of the rough. He believes—for the public-house oracle reads it out of a paper—that all the increasing wealth of the country is gathered out of his work. His own wages he squanders as soon as they are received. Thrift, and the science of spending so as to obtain the largest return, are beyond him, as much as the faculty of laying by against a rainy day; nor can he comprehend their practice, or their natural and legitimate consequences, in others. Penny-banks in vain woo him while beer and skittles offer their charms. A Hercules in one respect, he makes a very different choice between the competing goddesses. All that he knows of such matters is, that somehow he gets no better off, while other people improve their dwellings, their clothes, their social position; that he labours for these others, and apparently is excluded from all share in their increase of prosperity. So he concludes that he is a down-trodden slave; and enjoys the sensation of envy, since he cannot enjoy that of wealth.

This class antagonism is the only principle or sentiment of cohesion pervading the rough community. Touchy, captious, and unreasonable, they can never combine for any permanent action. No clubs, bands, or other associations of them are long-lived. 'Every man for himself' is a scattering, not a rallying cry, and it is the cry of every individual among them. Still, should we ever undergo a national catastrophe—should there ever happen to be a suspension of the power of the law, there would be the risk of a terrible, however temporary, outbreak of the volcanic forces. The middle and upper classes, who would necessarily be on the side of order, would ultimately prevail, but the country would bear the marks of mischief and destruction for many a year; just as a valley, inundated by the bursting of a dam, exhibits, long after the waters have swept by, the effects of their ruinous though rapidly-ceasing visitation. No future civil war or rebellion in Great Britain would be so free from wanton destruction and plunder as those which took place in former centuries. The Bristol Riots have already taught us this.

Our remarks may have appeared somewhat severe. They are, however, the expression of opinions, based on an unbroken experience of nearly twenty years. And we venture, on the ground of the same experience, to touch upon a few points in which we believe there is hope of improving the class under consideration. For that they may be improved is certain; and to endeavour

to improve them is equally the duty and the interest of all Englishmen. Our belief is that the roughs—the labouring roughs—are not a criminal class; and we now add that they are an unfortunate and a neglected class.

Very much is to be hoped for from compulsory education and habitual discipline, the supervision of more refined persons, and the secondary intercourse, through the school, with the clergy and other persons of the cultivated classes. And it is on this account, as much, or nearly as much, as on account of the direct religious instruction imparted by them, that we should regret to see any steps taken which would exclude the clergy from their present free intercourse with the school. They form almost the sole remaining link between rich and poor in our large town districts. And it is to the modern separation in residence of these two classes, to their ignorance of each other's ways and mutual opinions, that much of the envy and bitterness to which allusion has been made is to be attributed. Tom grows to like the parson—he praises his writing, criticises his reading, gives him a new fact in his geography—and when Tom goes to make bricks or help to wheel the costermonger's barrow, he will feel that broadcloth and gloves are not necessarily the uniform of one that grinds down the poor. There will be at any rate one good influence upon him to counteract many evil ones.

But the residuum of school-learning, we may hope, will also be a great gain. We have for the last few months made a practice of observing the topics upon which working-men, especially the labourers, converse as they walk the streets or stand at corners; and we have discovered only three—work, money, and drink. The last is the topic of so low a stamp of man, that we dismiss it at once. The other two are subjects which occupy the thoughts of men of every class of society, from the millionaire peer down to the beggar at our doors; but what can be more dreary than to have these as the sole and perpetually recurring subjects? Can anything be more cramping, more stagnating, or less calculated to give elasticity to the spirits or breadth to the mind, than the continual brooding over these two material topics? Now we are sanguine enough to hope that an improved education, one which is to be not only more nearly continuous, but also more liberal and varied—for the new code deserves this commendation—will supply lighter and higher matter of conversation and reflection. Thus the rough, as he comes forth from school to work, will start better, will be less rough to begin with, than his predecessors. He will have more to fall back upon, and will be more readily receptive of better impressions. It must, however, be expected that for a generation or so the improvement will be very gradual: the present home will exercise its influence still; and we must be content to wait till the seed now being sown has its harvest, and that again its sowing and its harvest beyond.

In connection with mental education should be mentioned physical recreation. It is with respect to this that we remarked just now that the rough is unfortunate and neglected. At the time of life when the animal spirits are highest, and play of some sort a necessity for their healthy indulgence, what resources have Tom and his fellows? In no other country in Europe is there so great a

want, and so meagre a supply, of places for suitable public recreation. Corporate bodies, especially the corporations of provincial towns, are notoriously short-sighted, but in no other respect does their shortness of sight lead them into such a labyrinth of petty troubles as those arising from the withholding of places of public recreation. Men of wealth, and educated to a certain degree, with sons of their own at public schools, whose talk is mainly upon athletics and cricket, do not seem to understand that young men are alike in physical requirements, whether students or costermongers, and that recreation, sports, games, exercise, are as necessary to keep the young rough out of mischief as to entertain the young gentleman in his spare hours. If we had more harmless and wholesome sports for the roughs, we should want less of the jail. At first, of course, there would be some abuse of the opportunity, but an improvement would certainly follow and remain.

Even clear spaces with seats, a few trees, and a drinking-fountain, without offering opportunities of exercise, would have a great moral effect. The general good-humour of the poor would be increased by having a spot to which they could go for a refuge, however short, from the steam of the washing-tub or the cry of babies. Leicester Square is far more luxurious than our ideal, but affords us an instance of our meaning. There is many a waste spot in the poorer parts of our large cities where a few seats might be placed, and a general air of comfort might be introduced. They would serve as the Rotten Rows or Birdcage Walks for the big lads and youths, and so drain off the gangs from street corners and alley mouths.

Indoor comfort, too, is but poorly provided. Whose son would not lose self-respect, decency, and courage, if bred up in foul air, close quarters, and dark rooms? The home makes the rough as much as the street. The cracked wall letting in the rain in patches of damp, if not in drops of water; the smoky chimney; the confined kitchen, staircase, and sleeping-rooms; all these have their moral influences, and those influences are of a hardening, souring, and brutalising tendency. With more room, and with better provision for decency, we may expect to find a growing appreciation of the idea of home. Few circumstances are so aggravating to the temper as want of room for freedom of movement.

There remains, however, another means of softening the rough—the intercourse with his betters in a kindly, friendly spirit. But this is an undertaking that few volunteers to join in. Nor is this surprising. Tom has nothing attractive about him. His look is against him, so are his manners, so is his language. No gentleman tries to make friends with him, unless it be in a patronising way that he suspects. So the breach between him and the wealthier and more powerful classes of society threatens to widen, and Tom's isolation to become more complete. We are experimentally sure that the only way to raise the individual is by friendly intercourse with him. Like all untutored races the roughs can feel very warm affection, and by means of the affections they can be raised. A clergyman or volunteer layman of distinct position—that is to say, of sufficiently liberal education and politeness of manner to rank as a gentleman conventionally, can achieve far more in the way of their

improvement than policeman, magistrate, and turnkey; for he will bring to bear upon them the refinement and gentleness of his own rank, and will patiently bear with their coarseness and fickleness. The 'British Workman' movement, by which coffee-rooms, with newspapers and indoor amusements, such as draughts or billiards, are opened in promising localities, affords good opportunities for cultivating this friendly intercourse; as also does the management of penny banks, temperance associations, drum-and-fife bands, and teaching in evening or Sunday classes. A feeling of respect and affection for one individual alone is capable of extension, and of introducing other elevating sentiments; self-respect and self-restraint among the first; toleration of reproach, and submission to the judgment of others, later on. And thus the soil is prepared for the reception of the gentle influences of Christianity.

There are two matters in which the action of the state is greatly needed for the improvement of the overstocked population of the class we have been reviewing: the one is emigration, the other the drink traffic.

Of the former of these subjects, the rough is equally ignorant of the facilities and prejudiced against the advantages. His *morale* in the department of industry is so undermined by the pernicious system of outdoor relief, that he shrinks from embarking on a voyage that will end in a land where he must work or starve. One sunny day we sat on a door-step in a miserable street, and conversed with Ginger, Lights, and a dozen more of our friends, all in the flower of their youth and vigour, but out of work through a strike and collateral causes. We held out the advantages of emigration to such as they, and promised to assist in every way such of them as would make trial of it. 'Look here, sir,' said one; 'see my hat' (it had been a good one once, but was shapeless and full of holes now); 'if I was to know I should have this hat'—and he banged it down on the stones—'full of gold sovereigns when I got to New Zealand, I'd stay at home and live on half a meal a day.' And the only reason we could elicit was, 'There's no back-door to come home by!' Education will enlighten on this head, as on others; and when a better understanding of the advantages shall by that means have been obtained, then it will be good policy on the part of the state to offer even greater than the present facilities for reaching them. Both the old and the new countries will be benefited by such a policy.

Meanwhile the drink traffic needs restrictions of a far more efficient character than exists at present. In a street where every man, if he chooses, can get a license to sell beer, sobriety is a plant of rare growth; and the want of recreation, to which we have before drawn attention, sends more customers than thirst or habitual drunkenness. The shortened hours of labour and the increase of wages, which we have witnessed during the past five years, have resulted, in our experience, in no real material good to any persons but the publicans. Limit this trade, not only as regards the times, but still more as regards the places of its action, and the source of most of the brutal assaults, quarrels, and brawls will be proportionately diminished. The police records of Liverpool can testify to the correctness of this opinion, from the obverse side of the case. The rough will possibly never cease

out of the land: but a reasonably restrictive law can remove much of the evil which helps to make him what he is.

SALVAGE.

IN TWO CHAPTERS.—CHAPTER II.

'DENIS DELMAR, you might have spared me this; my burden was already more than I knew how to bear.' She could say no more for the sobs which choked her utterance. In an instant, he was tenderly soothing her; and then this artful dog began to explain that it was not compulsory they should part.

'Alice, my darling,' he said, 'circumstances have occurred to-day which render it probable that my father may be induced to consent to our union. I am even now going to write to him, and I have every hope of my happiness depending only upon you, my dearest one, for its speedy fulfilment.'

The colour came and went, came and went, came again, and remained in her cheek. These few moments had done her more good than a six months' course of doctors, who would one and all have persisted in attacking the mind through the medium of the body, instead of the body through the medium of the mind. Already Alice looked changed for the better, and resting on the fond vision of future joy held out by that wicked Denis, she thought only of her present happiness. Denis soon found that she knew nothing of the late events; they had evidently been carefully concealed from her; so he forbore to enlighten her. Before he left that evening, he and Mr Graham had decided to keep the news of the former's peril from her, in consideration of her health. Long time they sat there, these reunited lovers, hand in hand, beauty and courage combining—what had they to fear from the world!—blissfully happy in each other's presence. Gently Denis drew her towards him, and gazed down into the depths and the summer of her brown eyes, in search of future happiness; and there he saw reflected the image of himself, which was itself an image of perfect bliss. Presently, Mr Graham came in; he asked no questions then; the scene explained itself; and so passed away the quiet gloaming, and again the night came down; the soft evening breeze blew gently in at the open window, and Denis felt the supreme power of *love*, and thought of his late wrestle with the power of *death*; and contrasting his present situation with that of the previous night, silently thanked his God for this great mercy, and was at peace.

When Denis left his hotel to follow Alice in the carriage, a man had watched his proceedings from a window with great interest, and with a face that wore a look of tenderness, tinged with a shade of sadness.

The Honourable Denis Delmar to Lord Delmar:

I trust you will believe me when I say that it is only through an accident that I have again seen Miss Wentwood; chance has thrown her once more in my way. Always delicate, my supposed desertion has seriously affected her, and already she is very ill. My father, if you separate us, you will have to answer for at least one death. But I feel that I cannot leave her. Once more, sir, I implore you to consent to our union, otherwise, I will

not answer for the consequences. Remember that I have always been a dutiful and obedient son, until now; weigh well your decision, I beseech you, and believe in the affection of your son,

DENIS DELMAR.

Lord Delmar to the Honourable Denis Delmar:

I need not tell you my pain and surprise on reading your letter. You well know my feelings in this matter; you have been unworthy of my confidence; but let that rest. Break off this unhappy connection, once and for ever, and retain my love; but if you can prefer the companionship of a girl sprung from no one knows where—to wealth, the society of people in your own station, and the regard of your parent—you are not worthy to be my son, and henceforward you will have to look to yourself alone for support. *I await your reply.*

The Honourable Denis Delmar to Lord Delmar:

Society is nothing to me without that of Alice Wentwood, and wealth would be a poor recompense for causing the death of one who looks to me for life and love. Pity and forgive me, sir; I cannot give her up.

Lord Delmar to the Honourable Denis Delmar:

If you persist, recollect that you choose your own path; follow it, and when you require counsel and assistance, perchance bread, remember that you have no longer a father.

P.S.—Your allowance, which will be paid in future through my bankers, will cease the moment you marry against my will.

The day following the receipt of this cruel and malicious letter, Mr Gimp and Denis were seated together at the hotel; the gloom on the face of the young man had greatly increased, and his whole aspect was careworn and haggard, speaking of utter dejection. He held his father's letter in his hand, but his eyes were bent upon the ground; he was cut to the heart. In the shock of the collision between these two obstinate natures, the outer covering of his father's love had fallen away, and left only the man's pride and selfishness exposed to view. And the lightning of his anger had, so to speak, scorched up the veneration and respect of the son for his parent. We know how bitter is the shock of the fall of a long-cherished idol. Mr Gimp, who had read the correspondence, had made no effort to console him; as yet, it was useless, and he seemed to be awaiting a fixed time to speak; it came at length.

'Denis, my poor fellow, be comforted.'

With a start, the other interrupted him; he had forgotten his presence; he was irritated, almost mad.

'Sir, I do not think my sorrow, which is caused by family affairs, can be relieved by useless talk, and I should be glad to be alone, if you will excuse me.'

The old man rose, and regarded him with a look of compassion, while the heart of Denis smote him hardly for his ingratitude.

'A few words before I leave you,' said his friend. 'Now answer me this: will you still hold to Miss Alice Wentwood?'

The answer came clear, and the tone was wrathful and deep: 'By Heaven's help, I shall!'

'And yet your happiness rests upon your reconciliation with your father?'

'It does' (huskily).

'Then listen to me, Denis Delmar: you shall have that wish, and I will adopt you as my son until that prediction is fulfilled. I command you to accept my offer, Denis Delmar; I command you, by the life and fortune you have restored to me. Denis, my boy, a childless old man asks for a son; will you not give him one for his old age?'

Denis could hold himself no longer. His heart went out to the old man—whose looks and manner had some mysterious power—and he embraced him with protestations of thankful regard only equalled by the abuse he poured down upon his own head for his recent ingratitude.

'Say no more,' said Mr Gimp; 'but obey my first request. Marry this girl as soon as you possibly can; announce your marriage to Lord Delmar; and join me in London, whither I go to-night on urgent business. I will obtain rooms for you. No thanks, dear boy; I need them not; simply do for me the greatest favour in your power, by acting as I tell you. Now, go and worry Alice until she fixes a day; and the sooner you are "turned off," the better for all parties. Bear my compliments, meanwhile, to the bride-elect; and say I regret having to defer making her acquaintance until we meet in town. Commend me to her good friend the lawyer. And now, good-bye, my dear boy: remain here till I send for you, and take great care of yourself; henceforth, you are necessary to me.' So saying, he shook hands warmly with the young man, and left the room to prepare for his journey.

The day following this scene, Lord Delmar received a letter couched in the following terms:

MY LORD—You have seen fit to injure your son by an unjust and cruel act. That injury will be revenged. You have cast a slur upon the name of Delmar by the infamous suggestion contained in your letter. That stain will be wiped out. You have cast from you the love and adherence of your son; another has taken it up. Extend your forgiveness at once to him who bears your name, or be prepared for the punishment which will surely follow your cruelty and injustice. A FRIEND.

'So,' exclaimed his lordship as he finished this epistle—'so Denis has descended to this, has he? Well, I am not surprised;' but just a little uneasy in his mind, he finished his breakfast.

Mr Graham had placed Alice with some friends, as he himself had returned to town—the day after we last saw him—on the plea of important business. Denis called on her after Mr Gimp's departure. 'Pussy, what do you think? I have received my orders to marry you at once!'

'Indeed!' was the arch reply. 'And where shall I be, while you are doing it?'

'I trust, by my side, my pet; swearing to love, honour, and o'—'

She stopped his utterance with a pouting kiss. 'Yes; but I haven't sworn yet; so I am not going to obey, you know, at present. And, besides, I have my marching orders. Listen, Denis;' and she read, slowly and methodically:

"23 QUEEN'S SQUARE, BLOOMSBURY,
August 29, 18—."

"MY DEAR GIRL—Come to me at once at Queen Square. I have some papers which you

must sign directly; and as your presence is indispensable, come by"—

'The —?'

'No, Denis; "the next train"' (very demurely). Reading resumed. "'I am very busy, and scarcely find time for this; so please excuse more from —Yours, affectionately, JAMES GRAHAM."'

'So now, Denis, I must go and pack.'

'Eh?'

'I say I must go and pack.'

'Ah!'

'Good-bye, Denis' (preparing to go).

'Here! stop; you know I'm going with you. You can't go alone.'

'I don't intend to; old Mr Maxwell is taking me under his wing.'

'I'm going too.'

'No; you're not.'

'Well, but'—

'Your promise to Mr Gimp.'

'Oh, the —!'

'Denis, that's twice' (gravely); 'I am very angry.'

He apologised. She forgave him. He tried to reason with her. She was obdurate. He expostulated; but in vain; the wilful girl would have her own way; and so, after many a tender passage-at-arms, the lover was left at Dover, while Alice took the iron road for London.

Poor Denis, left alone in his glory (?), cruised round in the *Firefly*, after the usual erratic manner of that insect. A week passed, and no letter from either of the absentees; ten days; Denis got troubled: he had written fourteen letters, and telegraphed twice to Alice, and never had a line. Presently, a bitter despair took possession of his heart. 'She has deserted me,' he cried, 'now that I am doubtless disinherited.' (He had refused all assistance from Lord Delmar.) No sign came from his strange well-wisher, who left no address. He was now at the end of his resources. A fortnight elapsed: he sold the yacht, which was his own; paid his bills, and resolved to go to town, seek out Alice, and find the reason of her extraordinary silence. His feelings of delicacy prevented his tracing Gimp. Having settled everything, he resolved to depart one hot and sultry day; the clouds were heavy and massive, so different to the light fleecy look they had lately borne. He thought it significant of his changing fortunes, and sighed. All nature was hushed, seeming to hold its breath in anticipation of a coming storm. Shortly after breakfast, it broke; the rain came down in torrents, and Denis was compelled to remain in-doors. He took up a newspaper to beguile the time. Suddenly, a vivid flash of lightning passed across the paper, and he saw fearfully distinct the words, 'Found drowned'; and as a fearful peal of thunder reverberated through the heavens, he read the following paragraph:

'Yesterday morning, some watermen discovered the body of a man near the Waterloo Bridge; when found, he was quite dead. Deceased has the appearance of a gentleman, and it is believed by some persons who saw him the previous day in an hotel, that he had lately arrived from abroad.' Then followed a description of his appearance and dress, which coincided in a great measure with those of Gimp. Denis dropped the paper; he turned faint, and a mist swam before his eyes.

He was aroused by a waiter entering with a letter. Denis took it, and opened it mechanically. The writing was unknown to him:

3 GRAY'S INN SQUARE, LONDON, W.C.

SIR—It is with great regret that we have heard of your late estrangement with your father, Lord Delmar, which fact we obtained from Mr Graham; as also of your refusal of assistance from him. We therefore take the liberty of informing you, that a friend and client of ours is in want of a private secretary and confidential friend. Should you entertain the idea, and will favour us with a call to-morrow afternoon at three o'clock precisely, our Mr James will introduce you; and you will pardon our reminder, that your acceptance of the post for a short period will give you time to look about you, and mature your plans. You are, however, of course aware that, as you still want a month of your majority, Lord Delmar is legally responsible for you until that period.—We remain, dear sir, yours obediently,

JAMES AND HURST.

The Hon. Denis Delmar.

Denis remembered the name of the firm as one who had transacted business for Lord Delmar some time back, but he was at a loss to account for the extraordinary interest they appeared to take in his affairs.

'Have I indeed fallen so low, that I am patronised by attorneys, and become an object of solicitude to lawyers' clerks?' he exclaimed bitterly. 'No matter; I will go; I can stand this no longer; I shall at least endeavour to seek Alice. I will take up the gage which misfortune has thrown down, and accept my destiny. Of one thing I am determined—I will never accept of one farthing from him.' That night, Denis was in London.

About the same time as he arrived, Lord Delmar read the following epistle:

3 GRAY'S INN SQUARE.

MY LORD—If you will call at my new office to-morrow at three o'clock, I believe I shall be able to give you some good news which materially concerns you, of a relative you have long believed dead. Hoping to see your lordship at the hour named, I am your lordship's obedient, humble servant,

JAMES GRAHAM.

The perspiration stood on the forehead of the haughty noble in great beads, yet his head and hands were cold as ice, and the letter dropped unheeded from his nerveless grasp.

The same day that Denis was to meet these lawyers, Mr Graham informed Alice that he intended to take her to transact some business with a friend, and that her presence was indispensable. Much marvelling, the fair young girl set out with the old man. They took their way to Gray's Inn Square, and were admitted by a youthful Adonis, who gazed admiringly at Alice, and, with a killing air, informed them that he would acquaint his employer of their arrival; and, being thanked with a smile, retired, covered with ink and confusion. Mr Graham left Alice seated in a dingy room, such as can only be found in the possession of a lawyer, and went in search of the friend. Our heroine had not remained long alone, when an old gentleman was ushered in, of noble appearance, and whose face bore a resemblance to some one she knew. Endeavouring in vain to recollect, Alice took up a newspaper of ancient date; but

scarcely had her eyes rested on the page, than, with a little cry, she sank back into the chair, overcome by emotion. Lord Delmar—for it was indeed that austere individual—was at her side, and cast upon her an admiring glance. Acting on an impulse, she pointed to the paragraph which had caused her exclamation. It was headed, 'True but Rare Nobility,' and contained a full account of the fearful gale at Dover, and the peril of the *Leopard*, as well as the history of the saving of the ship and crew by the 'Honourable Denis Delmar, the son of Lord Delmar, who, at the imminent risk of his life, put out to sea in a small boat, at fearful hazard, and after a whole night's pulling, succeeded, with the assistance of his volunteer crew, in boarding the ship, and saving her entire, by bringing her into port.' The brow of the old nobleman involuntarily lightened, and his eyes beamed as he read this account of the bravery of his cast-off son. In the excitement of the moment, his anger was forgotten.

'How grand!' exclaimed he. Alice revived.

'Grand indeed,' repeated she. 'His mind is as noble as his acts are brave.'

'Phengh!' whistled the old boy; 'this is true celebrity.' Alice buried her burning face in her hands.

'He never told me, he never told me!' she murmured.

'Hollo!' said the old one; then, noticing the distress and confusion of Alice, and taking regard of her beauty, he advanced, and endeavoured to console her. 'What may be your name, young lady, if you will excuse my curiosity?' Alice hung her head, and the tears forced themselves to her eyes in spite of all her efforts to appear composed. Then this strange man, who could without compunction discard his only relative for following the dictates of his own heart and conscience, felt uncomfortable at the sight of water oozing from a girl's eyes—we beg pardon, Beauty in tears. Going up to her, he took her hand, and, yielding to the power of her fascination, heartily wished himself young again. 'Will you not tell me your name, my sweet child?' At this moment, and before Alice could reply, the door opened, and another clerk appeared: 'Mr Graham will see Lord Delmar.' His lordship, turning to take leave of Alice, was startled at the look of horror and surprise upon her face; he had no time to ascertain the cause, as the clerk still awaited him at the door, and, turning his head once more, he saw her in the same attitude, and then left the room, much mystified. He was speedily ushered into the sanctum of Mr Graham, who rose as he entered, and requested him to take a seat. Then, as his lordship waited for him to commence the conversation, he said: 'Before entering upon the business about which I wrote to you, my lord, I will take the liberty of asking you a question. In case of a—ahem!—your son forming an attachment to a young lady of gentle but inferior birth to his own, would you consent to their union, provided she was educated, lady-like, and his happiness centred in her?'

'Sir,' replied Lord Delmar, coldly and haughtily, 'I have no son; and if I had, he should wed no one who was not his equal in rank and position at least.'

'Then, in that case, you would give your consent?'

'Sir, your cross-examination seems to me slightly impertinent; but as I have no reason to reserve my reply, I will answer you, to put an end to the useless discussion, that I would consent to his marriage with his equal, provided she was not absolutely portionless.'

'This is your decision, my lord?'

'Certainly it is.'

Mr Graham rang his bell, and the clerk instantly appeared. 'Shew in the young gentleman who waits.' A moment, and Denis appeared. 'Now the lady.' Then entered Alice, wondering what it all meant. After her, came the figure of a man, closely muffled, who shut the door, and took a seat near it, in the shadow. Denis looked at Alice in amazement; she gave a little cry of delight, and, utterly regardless of Lord Delmar or Mr Graham, who looked quite calmly on, they embraced tenderly.

'My lord,' said Denis, 'I come to claim your promise, though sooner than I expected.—Look up, dearest Alice; this is my father. You need not fear him, for Mr Graham assures me that you are my equal in rank and position. Is it not so, sir?'

'It is,' said Mr Graham quietly.

Alice raised her eyes imploringly to Lord Delmar, and disclosed to his astonished gaze the face of the lady he had previously endeavoured to console, though unsuccessfully. It was some time before he could gain sufficient control over himself to speak; when he could, the words came cold and bitter from between his sneering lips.

'So this is a conspiracy to obtain my consent to a marriage between a beggar and a penniless plebeian.'

'My lord, you have renounced and disinherited your son; therefore, he is a penniless orphan, and the lady is his equal. Thus, also, by your own words, you consent to his union with one in precisely his own position.'

'Pshaw! this is mere quibbling, and worthy of a lawyer.' Then, turning to Denis: 'As for you, wretched boy, my curse'—

Denis advanced, and caught his uplifted arm. 'You were my mother's husband, sir. Oh, do not curse me! I do not ask of you your wealth, or even the succession to the title; only let me have your consent to our marriage, and we will go abroad, and, in quitting you for ever, endeavour, in a foreign country, to obtain the subsistence denied us here.'

'You have heard me,' said the stern old man; and he drew himself to his full height. 'Now, leave me; never let me set eyes upon you again, or that artful and designing creature by your side. You will never have the consent of Lord Delmar.'

Denis had calmly submitted with bowed head to the bitter invective of his father, but on hearing the words recorded above applied to his darling, his passion was fearful, and gained the complete mastery; he glared upon his lordship, with flashing eyes, and brow black as night. What his action on the dire impulse might have been, no one knows. Happily, however, he was arrested by a deep voice saying: 'Hold! Denis Delmar; I command you. Poor boy, you have been too sorely tried.' All, except Mr Graham, gazed with speechless astonishment at the door. The voice had come from the unknown, who had risen, and advanced a step. The voice continued: 'You are forsworn, Denis Moreton; I say she shall marry with Lord Delmar's consent.'

With a fearful start, his lordship turned towards the speaker. 'Who calls me by that name?' said he hoarsely.

'One who knew your brother, Herbert Moreton.'

All started at the change in Lord Delmar's face; he seemed to have aged ten years; his cheeks were blanched, and his eyes seemed as if they saw visions of a fearful nature. He sank into a chair, breathing heavily; he was speechless. The stranger advanced from the shadow towards the young couple, as, with a glad and joyful cry, Denis recognised his friend and adopted father. The old man, for it was indeed he, turned a look of longing affection towards the youth; then appearing to constrain himself by a mighty effort, he turned to Mr Graham, who sat looking as if he knew all about it, as perhaps he did: 'James Graham, I have come to ask of you my ward. Where is my pet, my little Alice, the daughter of my dearest friend?'

Mr Graham pointed smilingly to Alice, who was in an instant clasped in the arms of her newfound guardian. Lord Delmar moaned.

The surprise of Denis at this scene was almost amusing; he stared from one to the other with a bewildered and almost petrified look. Who was this old man to whom everybody seemed to belong? Gimp advanced and took his hand, and pressing it warmly, placed it in that of Alice, saying: 'Cherish her, my boy; she will make you a loving wife, for I see she inherits the disposition of her father.'

A passionate exclamation broke from the lips of Lord Delmar. 'Who are you, sir?' cried he, livid with passion, though he half feared the reply. 'By what right do you dispose of a son in the presence of his father, and how dare you sanction his union with that beggar?'

'By the right of the life he gave me, Denis Moreton, when he rescued me from the cruel sea, and saved me from a watery grave. You have renounced the affection and adherence of this noble boy; I have adopted him. You yourself have said he is no longer your son. I will make him mine. I sanction the union, because you have given your consent to his marriage with his equal in rank and position. At present, my ward is both; and I will tell you why, Denis Moreton. You are not his father.' As he spoke, his form seemed to expand, his eyes flamed, and as he advanced, he looked an avenging spirit about to consummate his triumph. He threw off his overcoat, white wig, and comforter, which had quite concealed his person and the lower part of his features, advanced slowly to Lord Delmar, and laid his hand on his shoulder. His lordship took one look at his features; the word 'Brother!' with a shriek of agony, burst from his lips; he sank back, glaring with speechless horror, as at a spectre of the dead. Then was heard the deep voice of the other, who looked ten years younger, in proportion as Lord Delmar had aged.

'Denis Moreton, I have come back to claim at your hands my title, and more especially my son. Where is he? Have you nourished and supported him? Have you been to him as a father, as you swore to be, before God, when I suffered for your crime? Give me my boy, my darling boy, whom I have longed for, and dreamed of, all these years of suffering caused by you! Denis Moreton, I demand of you that which you hold in trust for me—my estates, my title, and, more than all, my

son.' Sternly he gazed on the countenance of his false brother; but the horror, the agony of remorse, the piteous cry: 'O God, O God, have mercy! Henry—brother, pardon!'—as he sank unconscious in his arms, went to his heart; and bearing him up tenderly, he reproached himself for arrogating the divine right of vengeance, as he placed the insensible form of his brother on the couch. Then he turned his eyes on Denis, and cried: 'Denis, my boy, my dear son, come at last to the heart of your father in reality.' As he fondly gazed on the noble and candid features of his restored son, and as he recalled the truthful and loving expression of the dear companion and wife, long since numbered with the just, his eyes filled with tears, and he pressed the youth still closer to his breast. Then calling to Alice, he joined their hands, and with the solemn words, 'THUS LORD DELMAR GIVES HIS CONSENT,' blessed them with all the fervour of a fond parent and affectionate guardian.

'Dear boy,' said he, after a pause of silent thankfulness, 'I owe you some explanation of this scene, as I see you do not yet guess all. Be seated, and I shall relate an old man's story. You were three years old when I accompanied your uncle (my younger brother) on an expedition, the particulars of which he refused me, but said that it was indispensable that he should return the same night, and that he required my assistance. I heedlessly yielded to his solicitations, and we went down to the sea-coast. He left me standing some distance from the water, with instructions to fire a pistol if I saw any one approaching from the interior. Before I could demand an explanation, he was gone. I remained some time in my position—it seemed to me hours—when suddenly I saw the form of a man advancing quickly from the cliffs. I fired my pistol at once, and at the same moment heard other shots, and my brother's voice raised above the din. I instantly ran forward in the direction of the apparent conflict, when I was stunned with a blow on the temple, and when I recovered, was in the hands of the coast-guard, together with some four or five smugglers, all bound, like myself. My brother was nowhere to be seen. In vain I protested my innocence; I was only laughed at; but when I reiterated my plea of ignorance of the affair, oaths took the place of derisive smiles, and I was ordered to be silent. During my incarceration in A—prison, my brother visited me, and implored me not to divulge his secret, as he was deeply involved with the gang, and he feared the worst, if it was known that he was the leader of it. I consented, upon condition that he would take upon himself the care of little Denis, your mother having died while giving you birth. He swore a solemn oath to do this. How he fulfilled his oath, I leave to the judgment of his Maker. I have already exceeded my mission. To make a long story short, I escaped, and obtained a commission in India, after which, having embarked in several prosperous speculations, I sold out of the army, and rapidly amassed a large fortune. I had previously heard of the accession of Denis to the title, on the death of my father. Hearing at last from Alice—with whose father I had served, as you know, and promised to undertake the care of his child—of the conduct of my brother, and the attachment between my son and my ward, I resolved to come

over and set matters right. I started for England, and what happened afterwards, you know.' With a trembling voice, he added: 'I owe my life to my own son.' He was silent for a moment, then he resumed: 'When I left you, Denis, at Dover, I came to town, and communicated my intentions of testing your honour, your patience, and your filial obedience, to Mr Graham. How greatly I am satisfied with that trial, your conscience and my looks will tell you, dear boy. We also planned this surprise, and God in His mercy grant that it may not have been carried too far.' As he spoke, he knelt by the side of his recreant brother.

'Come, Denis; this is all forgotten now; I am happier and more prosperous than I should have been, had I remained in England. Come, brother; when we have provided for these foolish young people, we will go down into Dorset, and spend the remaining years of our life in the country-house of our fathers, and try and forget the past. Look up, Denis—look up; all is forgotten and forgiven.'

Ere dropping the curtain, we see Denis standing in the centre of the stage, his affianced wife on the one hand, his new-found father on the other, and happiness and love hover above and around them. These are what our noble hero saved with the ship. This was Denis Delmar's *salvage*.

THE MONTH: SCIENCE AND ARTS.

EDUCATION may now be regarded as a perennial question, and when we find the universities holding public meetings for the purpose of promoting what is called 'university extension' in our large towns, we may conclude that a solution in some sort will be arrived at. Systematic training of the mind is essential to education; but there are thousands of persons interested in the subject who look upon instruction and education—pouring in and drawing out—as one and the same thing. A man may be crammed with knowledge and yet remain uneducated; and he may have a well-stored memory, but be utterly devoid of conscientiousness. If these trite propositions be kept in mind, the sooner we have a college for learning as well as science affiliated to Oxford or Cambridge, in each of our large towns, the better. The Right Honourable W. E. Forster made some wise remarks on the subject in a speech delivered recently at Leeds, which are well worth consideration; and he wound up with a few pregnant questions. Would Leeds with university extension become richer, happier, better? 'It must be remembered,' he said, 'that though knowledge is power, it is not virtue. Knowledge is not the power over one's self, as is ever being exemplified. It is power over nature; it supplies the means to resist others, to escape from tyranny and oppression, but it does not give moral purpose or self-denial.' The education which does not make a man feel that he has a conscience, nor inspire him with a love for earnest work, falls short of its purpose, and must be regarded as a snare.

Knowledge of art is an important element in education, and is susceptible of almost infinite development. Whatever a man's condition, whether he be author or artisan, merchant or musician, he finds advantage in a knowledge of art. Instruction can now be had on very moderate terms in all our large towns, and in some places scholarships are

offered to the most capable students. Among the schools of art now open there is one—the Royal Architectural Museum, Tufton Street, Westminster—which deserves to be widely known. This excellent institution is open freely to visitors; the collection of objects of art is described as magnificent; there are classes for drawing and modelling to which the admission fee is not more than sixpence a week; and during the present session, a class for drawing from the life is to be commenced. The advantages thus liberally offered will, we trust, be appreciated, for the promoters of the Museum are earnestly desirous that its resources should be made use of to the fullest extent.

A department has been added to the Bethnal Green Museum which promises to be highly instructive. In all manufactures, and, indeed, in all dwellings, there is a great deal of waste, some of which is noxious. Art and science are continually trying to discover uses for this waste, and have had much success; and in the new department above referred to, there is a large collection of articles manufactured from waste. Waste silk, cotton, and wool are now converted into clothing or articles of domestic use. Beautiful dyes and exquisite perfumes are obtained from waste coal-tar; cork clippings are manufactured into floorcloth; and many other articles are now 'on view,' as auctioneers say, at Bethnal Green. Any one who discovers a way to utilise waste (old corks, for instance), may reckon on an ample reward.

Oyster-culture makes such good progress in France, that it deserves a word of notice. On the coast of the Channel, along the Atlantic, and in the Mediterranean, the favourable results have inspired new activity, and, as we are informed, petitions for a strip of the foreshores are constantly presented to the Minister of Marine. The extent of artificial oyster-breeding grounds is now nearly four thousand acres, and, with the demand for new concessions, may be regarded as a growing quantity. The results hitherto obtained shew clearly that 'natural oyster-beds and artificial breeding-grounds must be united for better or for worse, to succeed and to fail simultaneously, each serving as a nursery for the other, an exchange of stock, spat, and germs being effected among them.' And to secure uniformity of operation and to prevent waste, 'special instructions have been issued to all maritime authorities to ascertain at what part of their districts experiments may be successfully attempted, under government supervision, for collecting spat and raising marketable oysters.'

As is well known, around our own coasts oyster-beds have been ruined by reckless dredging. But, by the intelligent supervision and careful nursing which prevail in France, the beds have been enriched to a degree that seems wonderful. For example, certain beds in the Arcahon district, which in 1870 were reported as exhausted, yielded in a few hours' dredging, last November, more than forty million marketable oysters. 'So, also at Granville, the fortunate dredgers who had a few free tides granted to dredge over old natural beds earned seven hundred thousand francs by their catch.' With these facts before us, we feel constrained to inquire—Cannot something be done to prevent the destruction of British oyster-beds, and restore their former fecundity?

Messrs Dewar and McKendrick of Edinburgh

have made a series of experiments on the physiological action of ozone. Ever since Schoenbein shewed that a mouse shut up in an atmosphere of ozone died in about five minutes, a notion has prevailed that ozone acts in an energetic way on the animal body; but until these experiments were made scarcely anything was known of the subject. The conclusions, as stated by the experimentalists are: '1. That the inhalation of an atmosphere highly charged with ozone diminishes the number of respirations per minute. 2. The pulsations of the heart are reduced in strength, and the heart is found beating feebly after the death of the animal (experimented on). 3. The blood is always found in a venous condition in all parts of the body, both in cases of death in an atmosphere of ozonised air and of ozonised oxygen.' (In this particular the action resembles that of carbonic acid.) '4. Ozone exercises a destructive action on the living animal tissues if brought into immediate contact with them; but it does not affect them so readily if they are covered by a layer of fluid. 5. Ozone acts as an irritant to the mucous membrane of the nostrils and air-passages, as all observers have previously remarked.'

Surgeons in Europe and America are now using raw cotton as a dressing for wounds, and with excellent effect. A layer of cotton spread over a wound or over the surface exposed by amputation, protects the part thoroughly, filters the air, and prevents the access of floating germs, whether poisonous or not. It is important that the cotton be fresh and of good quality; and if it is to be used in a hospital, it should not be previously exposed to the air of that hospital; moreover, a dressing should never be renewed in the foul air of a ward. In time of war and on the battle-field, the cotton would prevent much suffering. 'In civil practice,' as remarked by Dr Van Buren, 'it promises to be useful principally in the large hospitals of great cities, where pyæmia and erysipelas are always liable to become endemic, in preventing the poisoning of open wounds by those diseases, and also by thus enabling surgeons to save limbs which might otherwise require amputation.' The cotton above described is that manufactured in the form of wadding.

In some American hospitals cotton-waste is used instead of sponges in the washing and dressing of wounds. It is of the same kind as that used for the cleaning of engines, and is picked by some of the patients to prepare it for use. 'The advantages which it possesses,' states a Report, 'are, that it is as satisfactory in the dressing of wounds as sponges, and that when once used it can be destroyed.'

The treatment of fevers by application of cold water is growing more into use, and, as is shewn by trustworthy statistics, with good results: where twenty per cent. have died treated in the usual way, not more than four per cent. die under the water treatment. The method may be varied according to the nature of the case, from simple sponging, to wet sheets with friction, and different kinds of baths. The reduction of temperature is speedy, the relief of distressing symptoms is highly beneficial, and by means of the friction, moisture and evaporation from the skin are produced.

In Germany, disturbances and diseases of the stomach are now treated by means of the stomach-pump. The value of this instrument, as we gather from the clinical *Wochenschrift*, published at

Berlin, has been demonstrated in almost all gastric affections, in phthisis, and in cancer. Pure tepid water is pumped into the stomach, and pumped out, whereby the interior is cleansed and soothed. In some cases, medicaments are mixed with the water. For example—bicarbonate of soda when the reaction of the gastric fluid is very acid; permanganate of potassa when the fluids shew signs of decomposition; carbolic acid when there are vegetable parasites; boracic acid as a disinfectant, and tincture of myrrh in atomic dyspepsia accompanied by abundant production of mucus.

In the United States, it has been found that the stomach can be as readily filled and emptied by means of an india-rubber syphon, as by the stomach-pump.

A remarkable instance of a sudden rise of temperature in a mine is recorded in the Proceedings of the Academy of Sciences at Philadelphia. It was in the adit level of a lead-mine in Missouri, where, all at once, the heat rose from sixty degrees to more than a hundred, so that the miners were unable to continue their work. On searching for an explanation, it was found that the earth of the adit contained seventy-five per cent. of sulphate of protoxide of iron, and that the heating had been due to the rapid absorption of oxygen by sulphuretted iron disseminated throughout the earth in a finely divided condition.

At a meeting of the Newcastle-on-Tyne Chemical Society, Mr J. Wallace described an arrangement of a Bunsen burner with which there is perfect combustion of gas. The usual arrangement is reversed, and instead of regulating the pre-admixture of air from below, it is done at the top by back-pressure, by means of an adjustable perforated metallic plate placed over the top of the burner-tube. When the gas is lit, small bright green beads form on the perforations, and above them the flame appears, not a hollow flame with a dark interior, but a flame solid to the centre.

It is a noteworthy achievement to have proved that gas may be burnt completely in large quantities and in such a manner as to render it a useful and profitable fuel under many circumstances where a measured quantity of heat has to be produced. With a furnace comprising a cast-iron gas chamber into which twelve one-inch burners were fixed, Mr Wallace demonstrated his proposition. The combustion was perfect, whatever might be the quantity of gas passing, and was not disturbed by sudden lighting, or turning low, or off. A furnace of this kind, as was explained to the meeting, when placed below a steam-boiler, may be regulated by means of a valve adjusted to move at any given steam-pressure, and thus regulate the supply of fuel (that is, gas) exactly at the rate steam is required. There will be no deposit of soot, nor any 'striking down' of the flame, and no pressure is required beyond that of the ordinary gas supply. A small steam-boiler is indispensable in many laboratories, and in many operations in science and the arts; and with Mr Wallace's furnace such a boiler may be heated and kept under proper control. It has been proved that a boiler of four horse-power may be kept at work with a consumption of gas at the rate of sixpence an hour.

In connection with this subject we may mention that a steamship is building on the Tyne for a trading firm in Russia, who, as paraffine oil is cheap and

abundant in that country, intend to use nothing besides that oil as fuel. A vessel which does not require coal will have more room for cargo than an ordinary steamer.

According to a writer in the *Revue Industrielle*, the world need not be uneasy in prospect of the consumption of all its coal, for explosives will take the place of coal, and supply all the mechanical power required by future generations. A little more than a pound of dynamite, when exploded, would lift from the ground and project a weight of one hundred and sixty thousand kilogrammes. A kilogramme of nitroglycerine exploded in a closed chamber develops a theoretical pressure of two hundred and forty-three thousand atmospheres. The heat developed is in proportion; and we are assured that 'in a single litre of nitroglycerine there is stored up five thousand five hundred horsepower working continuously for ten hours.'

We are told that Egypt was the cradle of science. Certain it is that Egypt has long been asleep, and has of late shewn signs of waking up. A further sign is the establishing of a geographical society at Cairo, under the title *Société Khédiviale de Géographie*. The first meeting was held in June last. Dr Schweinfurth, the well-known traveller, delivered the inaugural address; and the Society have now begun the study of all branches of geography, and are endeavouring to throw light on those parts of Africa of which, at present, little or nothing is known. The results are to be published in a quarterly *Bulletin*.

A zoological society started in Philadelphia three years ago now numbers nearly nine hundred members. Their Gardens extend along the bank of the Schuylkill river, are well laid out, and have handsome buildings for the housing of the birds and other animals, which, as stated in the Society's Report, are worth nearly 50,000 dollars. The Gardens were opened in July 1874, while still unfinished; and in the eight months up to March of the present year, 227,557 visitors passed through the gates.

At a meeting of the Asiatic Society of Japan, at Yokohama, an account was given of the Shinanogawa, a river which drains the three provinces of Shinano, Musashi, and Yechigo. Its length is 250 miles, and in ordinary weather it discharges 1,500,000 cubic feet per minute. The width varies from 1500 to 4000 feet. If kept clear of shoals, it would be a fine channel for commercial purposes.

It appears that Australia is likely to produce precious stones in sufficient quantity to be made available as articles of commerce. In New South Wales, diamonds, sapphires, topazes, hyacinth, and other gems have been found; in the north-west, opals 'of great fire and brilliant colours' have been met with; and we are informed by the Rev. W. B. Clarke, Vice-president of the Royal Society at Sydney, that 'Eastern Australia is what he has often stated, one vast field of mineral wealth. From north to south, and from the coast to the 141st meridian, the western boundary of New South Wales, we know that coal, gold, copper, tin, and in many places lead, and other minerals of less local importance, are found in abundance.'

From experiments made in Australia we learn that the peppermint (*Mentha piperita*) can be grown with profit in many places. One acre of the plant will yield by distillation from ten to twelve pounds of oil; and the best peppermint oil is worth forty

shillings a pound. Price depends on quality, and quality on soil and culture. The best method is said to be to set the plants six inches from each other in rows, and the rows fifteen inches apart. Thus with peppermint, as with sunflowers, an additional resource is offered to enterprising colonists.

The published list of imports into the United Kingdom in 1874 comprises three hundred and eighty-three articles, the value of which is set down at a total of more than three hundred and seventy millions sterling. Among these articles are three hundred and forty million pounds of wool (the largest importation ever known in a single year), nearly fourteen million hundred-weight of cotton, more than forty-one million hundred-weight of wheat, about eleven million hundred-weight each of oats and barley, and of maize more than seventeen million hundredweight. Tea figures at one hundred and seventy million pounds, unrefined sugar at fourteen million hundred-weight, and tobacco at nearly eighty-one million pounds. Of butter we took one million six hundred thousand hundredweight, and of eggs six hundred and eighty millions, at a cost of £2,400,000. These are but a few out of the long list of products, but they convey a very suggestive idea of our manufacturing and consuming capabilities. If to the gross amount we add our exports, the sum-total appears almost incredible.

THE GARDEN.

A BALLAD IN THE OLD STYLE.

THE face of My Lady's a garden, I trow,
Where many a flower in beauty doth blow;
Forget-me-nots eke in their doubtlets of blue
Are those unto which her bright eyes owe their hue;
And Roses, Carnations, and Lilies, I ween,
In divers sweet nooks of this garden are seen.
Here Cupid delights him to wanton and play,
Now throned in a dimple, now starting away,
A-chasing, and kissing each innocent smile
That fain in that garden would wander awhile.
But alack! does My Lady hear ever a word
That teases or frets her—no sooner 'tis heard,
Than straightway her lips lose the form of Love's bow;
And the tips, 'stead of skyward, are pointed below;
Where lip joins with lip, there is gathered a frown,
The weight of whose gloom quickly presses adown
The spot where it rests; and alas for the smile
Which the sweets of those lips to rest there did beguile.

Its couch is aslant, and it slips into space,
Unable for longer to sleep on that face—
As lost is the smile, so the gay sunlight dies,
The sunlight that leaps from those merry blue eyes;
Half closed are the lids, which like clouds veil the light,
And Day in that garden has turned into Night. . . .
The fiercer the whirlwind, the quicker 'tis o'er;
The darker the frown, 'tis the sooner no more;
It passes away, and a smile takes its place,
The smile which so lately abandoned that face.

Young Cupid soon follows, o'erflowing with fun,
And happiness reigns, now that anger is done.
But if that the garden were beauteous before,
'Tis trebly so now the dark clouds have blown o'er.
No wonder that Cupid has made it his home,
For who, having found it, would thence seek to roam?

Printed and Published by W. & R. CHAMBERS, 47 Paternoster Row, LONDON, and 339 High Street, EDINBURGH. Also sold by all Booksellers.